

REMARKS

Specification Objection. In the Non-Final Office Action, Examiner Barnes-Bullock objected to the specification a second time for failing to include headings and therefore suggested headings to be included within the specification. As before, in view of the fact that heading are not required in accordance with MPEP §608.01(a), the Applicant hereby respectfully declines to add the headings suggested by Examiner Barnes to the specification.

Claim Rejection. In the Non-Final Office Action, Examiner Barnes-Bullock rejected pending claims 1, 6, 7, 10, 15, 16, 19, 21 and 22 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,671,058 to *Kawaguchi*. The Applicant responds to this §102(b) rejection as subsequently recited herein, and respectfully requests reconsideration of the present application

Specifically, the Applicant has thoroughly considered Examiner Barnes-Bullock's remarks concerning the patentability of claims 1, 6, 7, 10, 15, 16, 19, 21 and 22 over *Kawaguchi*. The Applicant has also thoroughly read *Kawaguchi*. To warrant this §102(b) rejection of claims 1, 6, 7, 10, 15, 16, 19, 21 and 22, each and every element as set forth in the independent claims 1, 10 and 19 must be either expressly or inherently described in *Kawaguchi*. See, MPEP §2131. The Applicant respectfully traverses this §102(b) rejection of independent claims 1, 10 and 19, because *Kawaguchi* fails to describe, expressly or inherently, the following limitations of independent claims 1, 10 and 19:

1. “wherein the or each gravity compensation controller (16; 25) uses the output signals generated by the or each position controller (13) as input signals, thereby generating output signals used by the or each gravity compensation actuator (17) to compensate gravitational forces acting on said position-controlled device (11)” as recited in independent claims 1 and 10; and
2. “characterized in that at least one gravity compensation controller uses output signals generated by the or each position controller as input signals thereby

generating output signals used by at least one gravity compensation actuator to compensate gravitational forces acting on said position-controlled device” as recited in independent claim 19.

Specifically, as shown in FIGS. 12 and 13 of *Kawaguchi*, a careful review of *Kawaguchi* reveals the fact that *Kawaguchi* teaches separate and distinct signal paths for generating position control output signals to be used by actuators to control the position of a position-controlled device, and for generating gravity compensation output signals to be used by the actuators to compensate gravitational forces acting on the position-controlled device. See, *Kawaguchi* at column 7, line 26 to column 8, line 47.

First, a position control signal path for generating output signals to be used by actuators 32 and 34 consist of:

- (1) a subtracting circuit 601(a) inputting position measurement signals from position sensors 31 and 33 to thereby output a radial angle signal;
- (2) a subtracting circuit 601(b) inputting both the radial angle signal from subtracting circuit 601(a) and an angle bias signal from a setting circuit 601(c) to thereby output a radial angle error signal; and
- (3) a first controller 602 inputting the radial angle error signal from subtracting circuit 601(b) to thereby output the position measurement signals to be used by actuators 32 and 34.

By comparison, a gravity compensation signal path for generating output signals to be used by actuators 32 and 34 consist of:

- (1) a calculating circuit 601(d) inputting position measurement signals from position sensors 31 and 33 to thereby output a calculated center of gravity signal;
- (2) a multiplying circuit 601(f) inputting both the calculated center of gravity signal from calculating circuit 601(d) and the angle bias signal from the setting circuit 601(c) to thereby output a targeted center of gravity signal;

(3) a subtracting circuit 601(e) inputting both the calculated center of gravity signal from the calculated circuit 601(d) and the targeted center of gravity signal from multiplying circuit 601(f) to thereby output a center of gravity error signal; and

(4) a second controller 603 inputting the center of gravity error signal from subtracting circuit 601(e) to thereby output the gravity compensation signals to be used by actuators 32 and 34.

The Applicant respectfully asserts that *Kawaguchi* unequivocally fails to expressly or inherently describe the gravity compensation signal path inputting an output signal from the position control signal path as required by the aforementioned limitations of independent claims 1, 10 and 19. Specifically, *Kawaguchi* fails to teach circuits 601(d)-601(f) of the gravity compensation signal path as inputting any of the output signals from circuits 601(a) and 601(b) of the position control signal path. Moreover, *Kawaguchi* in fact teaches away from the aforementioned limitations of independent claims 1, 10 and 19 by premising the two (2) signal paths on two (2) separate and distinct mathematical computations (position control and gravity compensation) primarily based on inputting the same position measurement signals from position sensors 31 and 33 and an angle bias signal from setting circuit 601(c).

Withdrawal of the rejection of independent claims 1, 10 and 19 under 35 U.S.C. §102(b) as being anticipated by *Kawaguchi* is therefore respectfully requested.

Claims 6 and 7 depend from independent claim 1. Therefore, dependent claims 6 and 7 include all of the elements and limitations of independent claim 1. It is therefore respectfully submitted by the Applicant that dependent claims 6 and 7 are allowable over *Kawaguchi* for at least the same reason as set forth herein with respect to independent claim 1 being allowable over *Kawaguchi*. Withdrawal of the rejection of dependent claims 6 and 7 under 35 U.S.C. §102(b) as being anticipated by *Kawaguchi* is therefore respectfully requested.

Claims 15 and 16 depend from independent claim 10. Therefore, dependent claims 15 and 16 include all of the elements and limitations of independent claim 10. It is therefore respectfully submitted by the Applicant that dependent claims 15 and 16 are allowable over *Kawaguchi* for at least the same reason as set forth herein with respect to independent claim 10

being allowable over *Kawaguchi*. Withdrawal of the rejection of dependent claims 15 and 16 under 35 U.S.C. §102(b) as being anticipated by *Kawaguchi* is therefore respectfully requested.

Claims 21 and 22 depend from independent claim 19. Therefore, dependent claims 21 and 22 include all of the elements and limitations of independent claim 19. It is therefore respectfully submitted by the Applicant that dependent claims 21 and 22 are allowable over *Kawaguchi* for at least the same reason as set forth herein with respect to independent claim 19 being allowable over *Kawaguchi*. Withdrawal of the rejection of dependent claims 21 and 22 under 35 U.S.C. §102(b) as being anticipated by *Kawaguchi* is therefore respectfully requested.

SUMMARY

The Applicant respectfully submits that claims 1-23 as listed herein fully satisfy the requirements of 35 U.S.C. §§102, 103 and 112. In view of the foregoing, favorable consideration and early passage to issue of the present application is respectfully requested. If any points remain in issue that may best be resolved through a personal or telephonic interview, Examiner Barnes-Bullock is respectfully requested to contact the undersigned at the telephone number listed below.

Dated: **September 12, 2008**

Respectfully submitted,
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